

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: **Chen et al.**

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Serial No. **10/756,919**

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Group Art Unit: **2624**

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Filed: **January 14, 2004**

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Examiner: **Abdi, Amara**

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For: **Method and Apparatus for  
Reducing Reference Character  
Dictionary Comparisons During  
Handwriting Recognition**

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**Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450**

**35525**  
PATENT TRADEMARK OFFICE  
CUSTOMER NUMBER

**APPEAL BRIEF (37 C.F.R. 41.37)**

This brief is in furtherance of the Notice of Appeal, filed in this case on September 19, 2007.

A fee of \$510.00 is required for filing an Appeal Brief. Please charge this fee to IBM Corporation Deposit Account No. 09-0447. No additional fees are believed to be necessary. If, however, any additional fees are required, I authorize the Commissioner to charge these fees which may be required to IBM Corporation Deposit Account No. 09-0447. No extension of time is believed to be necessary. If, however, an extension of time is required, the extension is requested, and I authorize the Commissioner to charge any fees for this extension to IBM Corporation Deposit Account No. 09-0447.

**REAL PARTY IN INTEREST**

The real party in interest in this appeal is the following party: International Business Machines Corporation of Armonk, New York.

## **RELATED APPEALS AND INTERFERENCES**

With respect to other appeals or interferences that will directly affect, or be directly affected by, or have a bearing on the Board's decision in the pending appeal, there are no such appeals or interferences.

## STATUS OF CLAIMS

**A. TOTAL NUMBER OF CLAIMS IN APPLICATION**

Claims in the application are: 1-20.

**B. STATUS OF ALL THE CLAIMS IN APPLICATION**

1. Claims canceled: NONE
2. Claims withdrawn from consideration but not canceled: NONE
3. Claims pending: 1-20
4. Claims allowed: NONE
5. Claims rejected: 1-20
6. Claims objected to: NONE

**C. CLAIMS ON APPEAL**

The claims on appeal are: 1-20

## **STATUS OF AMENDMENTS**

No amendments were submitted after the Final Office Action of June 19, 2007.

## SUMMARY OF CLAIMED SUBJECT MATTER

### **A. CLAIM 1 - INDEPENDENT**

The subject matter of claim 1 is directed to a method of in a device driver for handling a failure of a primary adapter in a data processing system. (Specification, p. 3, ll. 3-5; p. 11, l. 26-p. 13, l. 9; figs 3 & 4, all elements). The method includes queuing data in a data queue used by the primary adapter. (Specification, p. 9 ll. 20-25; p.11, ll. 19-20; fig. 3, step 316). The method further includes mon*It*oring the primary adapter for the failure. (Specification, p. 10, l. 24; p. 12, ll. 10-15; figure 4, step 404). The method further includes, responsive to detecting the failure, switching to a standby adapter handled by the device driver, wherein the standby adapter uses the data in the data queue. (Specification, p.9, l. 5-p. 10, l. 22; p. 12, l.18-p. 13, l. 9).

### **B. CLAIM 10 - INDEPENDENT**

The subject matter of claim 8 is directed to a data processing system for handling a failure of a primary adapter in a data processing system. (Specification, p. 3, ll. 3-5; p. 11, l. 26-p. 13, l. 9; figs 3 & 4, all elements). The data processing system includes a queuing means for queuing data in a data queue used to the primary adapter (Specification, p. 9 ll. 20-25; p.11, ll. 19-20; fig. 3, step 316). The data processing system further includes a mon*It*oring means for mon*It*oring the primary adapter for the failure. (Specification, p. 10, l. 24; p. 12, ll. 10-15; figure 4, step 404). The data processing system further includes a switching means for switching to a standby adapter handled by the device driver responsive to detecting the failure, wherein the standby adapter uses the data in the data queue. (Specification, p. 10, l. 24; p. 12, ll. 10-15; figure 4, step 404).

### **C. CLAIM 16 - INDEPENDENT**

The subject matter of claim 15 is directed to a computer program product in a recordable-type medium for handling a failure of a primary adapter in a data processing system. (Specification, p. 3, ll. 3-5; p. 11, l. 26-p. 13, l. 9; figs 3 & 4, all elements). The computer program product includes first instructions for queuing data in a data queue used by the primary adapter. (Specification, p. 9 ll. 20-25; p.11, ll. 19-20; fig. 3, step 316). The computer program product further includes second instructions for mon*It*oring the primary adapter for the failure.

(Specification, p. 10, l. 24; p. 12, ll. 10-15; figure 4, step 40). The computer program product further includes third instructions for switching to a standby adapter handled by the device driver responsive to detecting the failure, wherein the standby adapter uses the data in the data queue. (Specification, p. 10, l. 24; p. 12, ll. 10-15; figure 4, step 404).

## **GROUND OF REJECTION TO BE REVIEWED ON APPEAL**

The grounds of rejection to review on appeal are as follows:

### **A. GROUND OF REJECTION 1**

Whether claims 1 and 10-15 properly recite statutory subject matter under 35 U.S.C. §101.

### **B. GROUND OF REJECTION 2**

Whether claims 1-4, and 6-20 fail to be anticipated by *Ito et al.*, Character Input Apparatus/Method and Computer-Readable Storage Medium, U.S. Patent No. 6,694,056 (February 17, 2004) (hereinafter “*Ito*”) under 35 U.S.C. §102(e).

### **C. GROUND OF REJECTION 3**

Whether the Examiner failed to state a *prima facie* obviousness rejection against claim 5 over *Ito et al.*, Character Input Apparatus/Method and Computer-Readable Storage Medium, U.S. Patent No. 6,694,056 (February 17, 2004) (hereinafter “*Ito*”) in view of *Izumi*, Character Recognition Apparatus and Character Recognition Method, U.S. Patent Publication No. 2003/0099398 A1 (May 29, 2003) (hereinafter “*Izumi*”) under 35 U.S.C. § 103(a).



## ARGUMENT

### A. GROUND OF REJECTION 1 (Claims 1, and 10-15)

The Examiner rejects claims 1 and 10-15 under 35 USC §101 as being directed to non-statutory subject matter. Appellants request that the Board of Patent Appeals and Interferences overturn this rejection.

#### A.1. Claim 1

The Examiner rejects claims 1 under 35 USC §101 as being directed to non-statutory subject matter. Claim 1 is as follows:

1. A method for performing handwriting recognition for handwritten characters of a language having character stroke order rules, the method comprising the computer implemented steps of:
  - storing a plurality of respective reference parameter sets in a reference character dictionary, wherein each of the plurality of respective reference parameter sets corresponds to a reference character stroke of a reference character, wherein each of the plurality of respective reference parameter sets has an associated reference sequence number;
  - receiving a stroke parameter set derived from user input of a handwritten stroke, wherein the handwritten stroke is one of a plurality of strokes required for writing a character;
  - identifying a stroke sequence number of the stroke parameter set;and
  - responsive to identifying the stroke sequence number, comparing the stroke parameter set with at least those of the plurality of respective reference parameter sets having their associated reference sequence number equal to the stroke sequence number, wherein the comparing excludes at least one of the plurality of respective reference parameter sets.

A claim drawn to a process or method does not depend for its validity under 35 U.S.C. §101 on whether a computer is involved. If the claim is drawn to subject matter, which is otherwise statutory, it does not become nonstatutory merely because a computer is involved in its execution. Thus, the fact that it may be said that an invention is drawn to a computer program or involves a computer is an observation which does nothing to aid in the determination of compliance with §101. *In re Gelnovatch*, 595 F.2d 32, 36-37, 201 USPQ 136, 141 (CCPA 1979); *In re Johnson*, 589 F.2d 1070, 1081, 200 USPQ 199, 210-11 (CCPA 1978); *In re Chatfield*, 545 F.2d 152, 155, 191 USPQ 730, 733 (CCPA 1976). Therefore, any rejection which is based solely

on the determination that a computer or computer program is involved is insupportable because it is overly broad and must be reversed as being without basis in the law. *In re Diehr and Lutton*, 602 F.2d 982, 985, 203 USPQ 44, 48-49 (CCPA 1978).

With regard to the rejection of claim 1, the Examiner states the following:

In claim 1, 'the computer' should be deleted to be statutory subject matter....

Final Office Action dated June 19, 2007, p. 2.

As is made evident from the Examiner's statement regarding claim 1, the Examiner has clearly, and mistakenly, found Appellants' claim 1 nonstatutory for the sole reason that the method is a computer implemented method. By stating that the method can be made statutory by the simple deletion of the term "computer" from the claims, it is clear that the Examiner has drawn an improper distinction, in direct contravention of the teachings of *In re Gelnovatch*, *In re Johnson*, *In re Chatfield*, and *In re Diehr and Lutton*.

The Examiner's sole reason for holding claim 1 nonstatutory is that claim 1 recites a method comprising "computer implemented steps." This rejection is without merit. The Examiner has failed to recite any valid reason as to why the claim should be held non-statutory. The claim recites statutory subject matter. The rejection should be reversed.

## **A.2. Claims 10-15**

The Examiner rejects claims 10-15 under 35 USC §101 as being directed to non-statutory subject matter. Claim 10 is representative of the group of claims. Claim 10 is as follows:

10. A computer program product in a recordable-type medium for performing handwriting recognition of a language having character stroke order rules comprising:

a reference character dictionary including a first record defining a reference character, the first record including a plurality of reference parameter sets each of the plurality of reference parameter sets respectively defining stroke attributes of a stroke of the reference character, each of the plurality of reference parameter sets being associated with a reference sequence number;

first instructions for receiving a stroke parameter set derived from a first handwritten character stroke and for identifying a stroke sequence number in which the first handwritten character stroke was input by a user;

second instructions, responsive to identifying the stroke sequence number, for comparing the stroke parameter set with at least one of the plurality of reference parameter sets wherein the reference sequence

number of the plurality of reference parameter sets compared is equal to the stroke sequence number; and

third instructions for excluding at least one of the plurality of reference parameter sets from the comparing step wherein the reference sequence number of the plurality of reference parameter sets excluded is not equal to the stroke sequence number.

With regard to the rejection of claims 10-15, the Examiner states the following:

“[I]n claims 10-15, ‘a computer program product in a recordable-type medium’ must be ‘A computer readable medium’ encoded with a ‘computer program’ to be statutory subject matter.”

Final Office Action dated June 19, 2007, p. 2.

The USPTO guidelines for evaluating computer-readable medium encoded with functional descriptive material, such as a computer program, expressly states that a claim to such computer-readable medium when so encoded is statutory subject matter. USPTO, *Interim Guideline for Examination of Patent Application for Patent Subject Matter Eligibility* (26 Oct. 2005) (hereinafter “The Guideline”). The Guideline provides, in relevant part:

“[A] claimed computer-readable medium encoded with a data structure defines structural and functional interrelationships between the data structure and the computer software and hardware components which permit the data structure’s functionality to be realized, and is thus statutory.”

*Id.*, p. 52. The Guideline further provides:

Claims that recite nothing but the physical characteristics of a form of energy, such as a frequency, voltage, or the strength of a magnetic field, define energy or magnetism, per se, and as such are nonstatutory natural phenomena. O’Reilly, 56 U.S. (15 How.) at 112-14. Moreover, it does not appear that a claim reciting a signal encoded with functional descriptive material falls within any of the categories of patentable subject matter set forth in § 101.

...

These interim guidelines propose that such signal claims are ineligible for patent protection because they do not fall within any of the four statutory classes of § 101. Public comment is sought for further evaluation of this question.

*Id.*, pp. 55-56.

With regard to recordable-type media and computer readable media, the Appellants have defined such terms in the specification as follows:

[T]hose of ordinary skill in the art will appreciate that the processes of the present invention are capable of being distributed in the form of a computer readable medium of instructions and a variety of forms and that the present invention applies equally regardless of the particular type of signal bearing media actually used to carry out the distribution. Examples of computer readable media include recordable-type media, such as a floppy disk, a hard disk drive, a RAM, CD-ROMs, DVD-ROMs, and transmission-type media, such as digital and analog communications links, wired or wireless communications links using transmission forms, such as, for example, radio frequency and light wave transmissions.

Application as filed, pp. 44-45.

As defined in the Appellants' specification, computer readable media includes both recordable-type media, and transmission-type media. Claim 10 was amended in the Response filed April 26, 2007. Claim 10 was amended to recite only recordable-type media. The amendment was made to exclude computer program products embodied in non-statutory signals.

Claims 10-15, as written, recite a "computer program product in a recordable-type medium..." A recordable-type medium is defined clearly to be a computer readable media. However, unlike the computer readable media as defined in the specification, recordable-type media exclude computer programs encoded in non-statutory signals.

The Examiner's proposed amendment would actually make claim 1 non-statutory. If the claims were amended in the manner suggested by the Examiner, the claims would then encompass a non-statutory signal encoded with functional descriptive material. Claims 10-15 would then not fall within any of the categories of patentable subject matter set forth in § 101. The Examiner has failed to recite any valid reason as to why the claim should be held non-statutory. The claim recites statutory subject matter. The rejection should be reversed.

## **B. GROUND OF REJECTION 2**

The Examiner rejected claims 1-4 and 6-20 under 35 U.S.C. § 102(e) as anticipated by *Ito et al.*, Character Input Apparatus/Method and Computer-Readable Storage Medium, U.S. Patent No. 6,694,056 (February 17, 2004) (hereinafter "*Ito*"). Appellants request that the Board of Patent Appeals and Interferences overturn this rejection.

**B.1. Claims 1-4 and 6-9**

**i) Ito Does not teach a Reference Sequence Number as recited in Claim 1**

The Examiner rejected claims 1-4 and 6-9 under 35 U.S.C. § 102 as anticipated by *Ito*.

Claim 1 is representative of the group. Claim 1 is as follows:

1. A method for performing handwriting recognition for handwritten characters of a language having character stroke order rules, the method comprising the computer implemented steps of:
  - storing a plurality of respective reference parameter sets in a reference character dictionary, wherein each of the plurality of respective reference parameter sets corresponds to a reference character stroke of a reference character, wherein each of the plurality of respective reference parameter sets has an associated reference sequence number;
  - receiving a stroke parameter set derived from user input of a handwritten stroke, wherein the handwritten stroke is one of a plurality of strokes required for writing a character;
  - identifying a stroke sequence number of the stroke parameter set;
  - and
  - responsive to identifying the stroke sequence number, comparing the stroke parameter set with at least those of the plurality of respective reference parameter sets having their associated reference sequence number equal to the stroke sequence number, wherein the comparing excludes at least one of the plurality of respective reference parameter sets.

A prior art reference anticipates the claimed invention under 35 U.S.C. § 102 only if every element of a claimed invention is identically shown in that single reference, arranged as they are in the claims. *In re Bond*, 910 F.2d 831, 832, 15 U.S.P.Q.2d 1566, 1567 (Fed. Cir. 1990). All limitations of the claimed invention must be considered when determining patentability. *In re Lowry*, 32 F.3d 1579, 1582, 32 U.S.P.Q.2d 1031, 1034 (Fed. Cir. 1994). Anticipation focuses on whether a claim reads on the product or process a prior art reference discloses, not on what the reference broadly teaches. *Kalman v. Kimberly-Clark Corp.*, 713 F.2d 760, 218 U.S.P.Q. 781 (Fed. Cir.1983). In this case, each and every feature of the presently claimed invention is not identically shown in the cited reference, arranged as they are in the claims.

*Ito* does not anticipate claim 1 because *Ito* does not teach the claimed feature of, “wherein each of the plurality of respective reference parameter sets corresponding to the reference character strokes has an associated reference sequence number,” as required in claim 1. Instead, *Ito* teaches recording the order of a plurality of strokes and then differentiating the characters

based on the elapsed time between the different strokes. As shown below, the Examiner's assertions to the contrary are incorrect.

With regard to the claim feature of "wherein each of the plurality of respective reference parameter sets corresponds to a reference character stroke of a reference character," the Examiner cites the following section of *Ito*:

The above object can be achieved by a character input apparatus comprising: a stroke dictionary in which sets of standard stroke information for a plurality of strokes are registered, each set of standard stroke information corresponding to a different stroke....

*Ito*, col. 2, ll. 2-3.

In support of this assertion, the Examiner cites the to a brief discussion of the stroke dictionary from *Ito*'s summary. *Ito* later defines the stroke dictionary as follows:

The stroke dictionary **101** stores stroke information for identifying strokes that constitute characters. A "stroke" here means a single continuous pressing of the tablet **201** with and the direction "d0". The stroke is almost a straight line with no change in direction between the start point and the end point.

*Ito*, col. 7, ll. 60-65.

When a coordinate string of a user stroke has been received from the coordinate input unit **105**, the stroke matching unit **106** finds stroke information for the user stroke. In detail, the stroke matching unit **106** fetches the start area from the coordinate of the start point of the stroke based on the area information **401**, the direction numbers from the coordinate string of the stroke using a conventional segment method based on the direction information shown in **FIG. 5**, and the end area from the coordinate of the end point of the stroke based on the area information **401**.

Following this, the stroke matching unit **106** compares the stroke information for a user stroke obtained from the coordinate string received from the coordinate input unit **105** with each set of the stroke information stored in the stroke dictionary **101**.

*Ito*, col. 9, ll. 3-17.

Up to this point, *Ito*'s stroke dictionary contains reference characters, similar to those recited by the Applicants. However, the stroke number recited in *Ito*'s stroke dictionary is not the Applicants' stroke sequence number. That is, *Ito* does not anticipate claim 1 because *Ito* does not teach the claimed feature of, "wherein *each of the plurality of respective reference parameter*

*sets corresponding to the reference character strokes has an associated reference sequence number....”*

Instead, *Ito* teaches that each stroke of a character is assigned an arbitrary stroke number. Once a determination is made that stroke information for a user stroke obtained from the coordinate string received from the coordinate input unit matches a set of the stroke information stored in the stroke dictionary, the stroke is referenced by its stroke number. After a plurality of strokes are received and matched – and therefore a plurality of stroke numbers determined – a character is identified by summing all of the stroke numbers, *regardless of the order in which the strokes were entered*. If the sum of the stroke numbers matches the stroke numbers comprising the character, that character is chosen as a match. *Ito* provides an example of this process by stating the following:

According to the character dictionary **102**, the character “**ㄗ**” with the character number “c0” has “3” strokes (i.e. K=3) Therefore, the interval-based character detecting unit **108** judges whether *the stroke numbers of any combination of the stroke candidates* for the stroke string **i1000** to **i1002** match the stroke numbers shown in the order of strokes **705** in **Fig. 7**. The stroke numbers “s0”, “s1”, and “s2” of the best stroke candidates “sc0” for these three user strokes match the stroke numbers shown in the order of strokes **705**, so this character “c0 (**ㄗ**)” is chosen as a character candidate.

*Ito*, col. 11, ll. 5-14 (emphasis added).

In contrast, a reference sequence number necessarily includes the context in which it is entered. In a language having stroke order rules for handwritten characters, certain characters are necessarily omitted from the list of possible characters, based upon the entered order of the different strokes which comprise the character. The reference sequence number therefore defines the relative entry input order of a stroke in relation to the other strokes comprising a certain character. The appellants state this as follows:

As referred to herein, a reference sequence number is the proper stroke number of a stroke sequence for writing a character according to an accepted stroke order rule. In accordance with a preferred embodiment of the present invention, a reference sequence number is associated with a reference parameter set by way of the particular field in which the reference parameter set is stored.

Application as Filed, pp. 31-32.

Therefore, because a reference sequence number, as defined by the Applicants, necessarily includes a “proper stroke number of a stroke sequence for writing a character according to an accepted stroke order rule,” the character number of *Ito* cannot be the Applicants’ reference sequence number. Because *Ito*’s character number does not read on the Applicants’ reference sequence number, *Ito* cannot properly anticipate the rejected claims. Therefore, the Examiner’s rejection of claims 1-4 and 6-9 under 35 U.S.C. § 102 as anticipated by *Ito* is improper, and should be overturned.

**ii) The Cited passage does not teach comparing a stroke parameter set with a reference parameter set.**

Furthermore, even if the character number of *Ito* is found to read on the Applicants’ reference sequence number, *Ito* does not anticipate claim 1 because *Ito* does not teach the claimed feature of, “*comparing the stroke parameter set* with at least those of the plurality of respective reference parameter sets *having their associated reference sequence number equal to the stroke sequence number*, wherein the comparison excludes at least one of the reference parameter sets,” as required in claim 1. Instead, *Ito* teaches recording the order a plurality of strokes and then differentiating the characters based on the elapsed time between the different strokes. As shown below, the Examiner’s assertions to the contrary are incorrect.

With regard to the claim feature of “*comparing the stroke parameter set* with at least those of the plurality of respective reference parameter sets *having their associated reference sequence number equal to the stroke sequence number*, wherein the comparison excludes at least one of the reference parameter sets,” the Examiner cites the following sections of *Ito*:

On judging that none of these user strokes is a first stroke, or if the number of strokes K is judged to be "1" in step **S1605**, the interval-based character detecting unit **108** *compares the combinations of stroke candidates* for the I to (I+K-1) th user strokes *with the order of strokes in the present registered character cJ in the character dictionary 102*. If a combination of stroke candidates matches, the registered character cJ is chosen as a character candidate (**S1608**). This completes the judgement for the present registered character cJ, so the interval-based character detecting unit **108** adds "1" to the counter J (**S1610**).

*Ito*, col. 12, ll. 59-65 (emphasis added).

In contrast to the Examiner’s assertion, the cited passage of *Ito* does not teach “comparing the stroke parameter set... with... a respective parameter set.” The cited passage



instead compares a combination of stroke candidates with the order in which the various strokes were entered into the character input apparatus. The comparison performed in the cited passage determines a list of candidate characters from a group of identified strokes. The comparison performed in the cited passage of *Ito* occurs only after the various strokes are entered into *Ito*'s apparatus, the stroke information set for each stroke is determined, and the stroke number for each stroke information set is determined.

As explained earlier, this comparison in *Ito* determines whether the stroke numbers contained in candidate character matches a random string of stroke numbers, as determined from the input stroke information. *Ito*'s string of stroke numbers is not concerned with any sequence order, and as stated earlier, *Ito*'s comparison metric expressly states that a reference stroke will match any combination of input character strokes. See *Ito*, col. 11, ll. 5-14.

Claim 1 instead recites the claim feature of “*comparing the stroke parameter set* with at least those of the plurality of respective reference parameter sets *having their associated reference sequence number equal to the stroke sequence number*, wherein the comparison excludes at least one of the reference parameter sets.” In the cited passage, the Appellants are comparing a *stroke parameter set* – not a combination of stroke candidates as per *Ito* – to a *reference parameter set* – not an order of strokes, again as per *Ito*.

Therefore, because the passage cited by the Examiner fails to teach the limitation of “comparing the stroke parameter set... with... a respective parameter set,” the Examiner has failed to state a *prima facie* case of anticipation under 35 U.S.C. § 102. Therefore, the Examiner's rejection of claims 1-4 and 6-9 under 35 U.S.C. § 102 as anticipated by *Ito* is improper.

**iii) *Ito* does not teach equating a reference sequence number to a stroke sequence number**

*Ito* does not anticipate claim 1 because *Ito* does not teach the claimed feature of, “*comparing the stroke parameter set* with at least those of the plurality of respective reference parameter sets *having their associated reference sequence number equal to the stroke sequence number*, wherein the comparison excludes at least one of the reference parameter sets,” as required in claim 1. Instead, *Ito* teaches recording the order a plurality of strokes and then differentiating the characters based on the elapsed time

between the different strokes. As shown below, the Examiner's assertions to the contrary are incorrect.

The Examiner has read Applicants' claim 1 feature of a "reference sequence number" to be the "stroke number" of *Ito*. From the above cited passage, it appears that the Examiner has equated Applicants' claim 1 feature of a "stroke sequence number" with the *Ito*'s "order of strokes." Therefore, based on the Examiner's statements, *Ito*'s stroke number must be equated to *Ito*'s order of strokes in order to anticipate Applicants' claim 1 feature of "*comparing the stroke parameter set with at least those of the plurality of respective reference parameter sets having their associated reference sequence number equal to the stroke sequence number.*" Such an attempted equation is not only illogical and resulting in a nonsensical comparison, but it also is directly contradictory to the stated teaching of *Ito*.

As shown above, *Ito*'s stroke number is an arbitrary reference number assigned to a particular set of stroke information, made to facilitate the comparison of a plurality of strokes to a reference character. *Ito*'s Figure 6 shows that the stroke numbers include the references such as **S0, S1, S2**, etc.

In contrast, *Ito*'s "order of strokes" is the chronological order in which sequential strokes are entered into *Ito*'s character input apparatus. *Ito*'s "order of strokes" can be any sequential based counter.

Thus, while the *Ito*'s stroke number is indeed *associated with* an "order of strokes," the stroke number will never be *equal to* the "order of strokes." Due to the different nature of the data represented by *Ito*'s stroke number and "order of strokes," such a comparison is completely nonsensical.

Furthermore, even if *Ito*'s stroke number and "order of strokes" could somehow be compared, i.e., if the Examiner hadn't previously equated the stroke number to the Applicants' reference sequence number, equating the two values would be completely contradictory to the stated teaching of *Ito*. As stated above, *Ito* compares a group of stroke numbers to a reference character, regardless of the order in which the strokes were actually entered into *Ito*'s character input apparatus. Hypothetically, if suddenly *Ito* required that the stroke number and "order of strokes" should be equal, such a requirement would be in direct contradiction to *Ito*'s stated teaching.

Therefore, because *Ito* does not teach the claimed feature of, “*comparing the stroke parameter set* with at least those of the plurality of respective reference parameter sets *having their associated reference sequence number equal to the stroke sequence number*, wherein the comparison excludes at least one of the reference parameter sets,” *Ito* cannot anticipate claim 1. Because *Ito*’s stroke number cannot logically be equal to *Ito*’s “order of strokes,” *Ito* cannot anticipate Applicants’ claim 1 feature of “*comparing the stroke parameter set* with at least those of the plurality of respective reference parameter sets *having their associated reference sequence number equal to the stroke sequence number*”. Therefore, the Examiner’s rejection of claims 1-4 and 6-9 under 35 U.S.C. § 102 as anticipated by *Ito* is improper, and should be overturned.

## **B.2. Claims 10-15**

The Examiner rejected claims 10-15 under 35 U.S.C. § 102 as anticipated by *Ito*. Claim 10 is representative of the group. Claim 10 is as follows:

10. A computer program product in a recordable-type medium for performing handwriting recognition of a language having character stroke order rules comprising:
  - a reference character dictionary including a first record defining a reference character, the first record including a plurality of reference parameter sets each of the plurality of reference parameter sets respectively defining stroke attributes of a stroke of the reference character, each of the plurality of reference parameter sets being associated with a reference sequence number;
  - first instructions for receiving a stroke parameter set derived from a first handwritten character stroke and for identifying a stroke sequence number in which the first handwritten character stroke was input by a user;
  - second instructions, responsive to identifying the stroke sequence number, for comparing the stroke parameter set with at least one of the plurality of reference parameter sets wherein the reference sequence number of the plurality of reference parameter sets compared is equal to the stroke sequence number; and
  - third instructions for excluding at least one of the plurality of reference parameter sets from the comparing step wherein the reference sequence number of the plurality of reference parameter sets excluded is not equal to the stroke sequence number.

Claims 10-15 recite a computer program product in a recordable-type medium corresponding to the method of claims 1-9. Claims 10-15 recite similar features to those found in claims 1-9. The distinctions between claims 1-9, as presented above, are equally applicable to claims 10-15. Therefore, for at least those reasons presented above, claims 10-15 are also not

anticipated by *Ito*. The Examiner's rejection of claims 10-15 under 35 U.S.C. § 102 as anticipated by *Ito* is improper, and should be overturned.

### **B.3. Claims 16-20**

The Examiner rejected claims 16-20 under 35 U.S.C. § 102 as anticipated by *Ito*.

Claim 16 is representative of the group. Claim 16 is as follows:

16. A data processing system comprising:
  - a reference character dictionary including a record having a plurality of reference parameter sets each defining reference attributes of a respective stroke of a reference character, each of the plurality of reference parameter sets having an associated reference sequence number;
  - a memory that contains a set of instructions; and
  - a processing unit, responsive to executing the set of instructions, for receiving a stroke parameter set describing handwritten attributes of a handwritten stroke and for determining a stroke sequence number in which the handwritten stroke was input, responsive to determining the stroke sequence number, comparing the stroke parameter set with at least one of the plurality of reference parameter sets wherein the associated reference sequence number of at least one of the plurality of reference parameter sets is equal to the stroke sequence number, the comparing step excluding at least one of the plurality of reference parameter sets wherein the associated reference sequence number is not equal to the stroke sequence number.

Claims 16-20 recite a data processing system corresponding to the method of claims 1-9. Claims 16-20 recite similar features to those found in claims 1-9. The distinctions between claims 1-9, as presented above, are equally applicable to claims 16-20. Therefore, for at least those reasons presented above, claims 16-20 are also not anticipated by *Ito*. The Examiner's rejection of claims 16-20 under 35 U.S.C. § 102 as anticipated by *Ito* is improper, and should be overturned.

### **C. GROUND OF REJECTION 3**

The Examiner rejected claim 5 under 35 U.S.C. § 103 as obvious over *Ito* in view of *Izumi*, Character Recognition Apparatus and Character Recognition Method, U.S. Patent Publication No. 2003/0099398 (May 29, 2003) (hereinafter "*Izumi*").

#### **C.1. The Examiner has Mischaracterized the Feature of Claim 5.**

Claim 5 is as follows:

5. The method according to claim 1, further including:  
receiving an indication that a user has knowledge of the character stroke order rules.

With regard to claim 5, the Examiner states:

*Ito et al.* does not explicitly mention the receiving of indication that the user has knowledge of the character stroke order rule.

Izumi, in analogous environment, teaches character recognition apparatus and method, where the user has knowledge of the character stroke order rule (paragraph [0052], line 6-11).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the handwriting method of Izumi, wherein the user has knowledge of the character stroke order rules, in the system of *Ito et al.*, in order to provide a character recognition method capable of inputting a pictorial symbol made up of a plurality of character with an improved efficiency (paragraph [0012], line 1-4).

Final Office Action dated June 19, 2007, pp. 12-13.

The Examiner bears the burden of establishing a *prima facie* case of obviousness based on prior art when rejecting claims under 35 U.S.C. § 103. *In re Fritch*, 972 F.2d 1260, 23 U.S.P.Q.2d 1780 (Fed. Cir. 1992). The prior art reference (or references when combined) must teach or suggest all the claim limitations. *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). In determining obviousness, the scope and content of the prior art are... determined; differences between the prior art and the claims at issue are... ascertained; and the level of ordinary skill in the pertinent art resolved. Against this background the obviousness or non-obviousness of the subject matter is determined. *Graham v. John Deere Co.*, 383 U.S. 1 (1966). "Often, it will be necessary for a court to look to interrelated teachings of multiple patents; the effects of demands known to the design community or present in the marketplace; and the background knowledge possessed by a person having ordinary skill in the art, all in order to determine whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue." *KSR Int'l. Co. v. Teleflex, Inc.*, No. 04-1350 (U.S. Apr. 30, 2007). "*Rejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness. Id.* (citing *In re Kahn*, 441 F.3d 977, 988 (CA Fed. 2006))."

The Examiner is either confused as to the teaching of Izumi, the feature claimed by the

Applicants, or both. The Examiner cites the following section of *Izumi*:

[0052] The reference stroke data as shown in FIG. 3B is registered in the pictorial symbol recognition dictionary 20a such that the handwritten pattern shown in FIG. 6A can be recognized even though the strokes are input in either of the orders shown in FIGS. 6B and 6C, i.e., "(", " ", "\_", " ", and ")" and "(, ")", " ", " ", and "\_". If, therefore, a user writes a pattern representing a pictorial symbol by hand in arbitrary stroke order without being conscious of the input order of a plurality of finally-input characters, he or she can input the characters representing the pictorial symbol to a text.

*Izumi*, paragraph [0052].

Foremost, the Examiner has mischaracterized the claimed feature of claim 5. The Examiner has interpreted claim 5 to claim “wherein the user has knowledge of the character stroke order rules.” This feature does not appear in the Applicants’ claim 5. Rather, claim 5 recites the feature of “receiving an indication that a user has knowledge of the character stroke order rules.” The cited section of *Izumi* does not receive any indication. Rather the cited section of *Izumi* merely teaches that characters can be recognized regardless of their input order.

Furthermore, the Appellantsnote the Examiner’s misinterpreted claim 5, is non-limiting at best, and possibly nonstatutory at worst. At best, the Examiner’s misinterpreted feature is non-limiting, since it would be claiming knowledge of the user, and would not be directed to the claimed method. At worst, the Examiner’s misinterpreted feature would render the claim nonstatutory, because it would occur solely within the mind of the user, and would seem to claim nonstatutory subject matter.

However, as already stated, the Appellantsare not claiming the feature, “wherein the user has knowledge of the character stroke order rules.” Rather, claim 5 recites the feature of “receiving an indication that a user has knowledge of the character stroke order rules.” “Receiving an indication” is statutory and further limiting of the claim.

Finally, the cited section of *Izumi* teaches that the “handwritten pattern shown in FIG. 6A can be recognized even though the strokes are input... hand in arbitrary stroke order....” Thus, the cited section of *Izumi* is actually teaching the exact opposite of the feature the Examiner has imparted to the claim. Only a user without knowledge of stroke order would input strokes “in an arbitrary stroke order.”

Because the Examiner has clearly mischaracterized the features of both claim 5 and the

teaching of *Izumi*, the Examiner has not cited any reference that actually teaches the feature of claim 5. Furthermore, the Examiner has acknowledged that *Ito* does not teach the feature of claim 5. Therefore, the Examiner's rejection of claim 5 under 35 U.S.C. § 103 as obvious over *Ito* in view of *Izumi* is improper and should be overturned.

### **C.2. *Izumi* does not Teach the Feature of Claim 5**

As indicated above, claim 5 recites the feature of "receiving an indication that a user has knowledge of the character stroke order rules." The cited section of *Izumi* does not receive any indication. Rather the cited section of *Izumi* merely teaches that characters can be recognized regardless of their input order.

Because the Examiner has clearly mischaracterized the features of both claim 5 and the teaching of *Izumi*, the Examiner has not cited any reference that actually teaches the feature of claim 5. Furthermore, the Examiner has acknowledged that *Ito* does not teach the feature of claim 5. Therefore, the Examiner's rejection of claim 5 under 35 U.S.C. § 103 as obvious over *Ito* in view of *Izumi* is improper and should be overturned.

### **C.3. Claim 5 is Allowable Based on its Dependence from Claim 1**

The obviousness rejection of Claim 5 is predicated upon the assertions made with respect to *Ito*. As shown above, the underlying assertions made by the Examiner regarding *Ito*'s teachings are incorrect vis-à-vis the independent claims. Specifically, *Ito* does not teach the feature of, "wherein *each of the plurality of respective reference parameter sets* corresponding to the reference character strokes *has an associated reference sequence number*," as recited in the independent claims. For this reason, *Ito* does not teach all of the features of claim 5, at least by virtue of its dependence on independent claim 1. For the similar reasons, *Ito* does not suggest all of the features of claim 1.

Additionally, *Izumi* does not teach or suggest the feature of, "wherein *each of the plurality of respective reference parameter sets* corresponding to the reference character strokes *has an associated reference sequence number*...." The Examiner does not assert otherwise. While *Izumi* is related to character recognition, *Izumi* is devoid of disclosure regarding the shown deficiency of *Ito*.

As shown above, neither *Ito* nor *Izumi* teach or suggest all of the features of claim 5, at least by virtue of its dependency on independent claim 1. Therefore, the proposed combination of these references when considered together as a whole does not disclose all of the features of claim 5. For this reason, the Examiner has failed to state a *prima facie* obviousness rejection against these claims.



**D. CONCLUSION**

As shown above, the Examiner has failed to state a *prima facie* obviousness rejection against any of the claims. Therefore, Appellants request that the Board of Patent Appeals and Interferences reverse the rejections. Additionally, Appellants request that the Board direct the Examiner to allow the claims

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## CLAIMS APPENDIX

The texts of the claims involved in the appeal are:

1. A method for performing handwriting recognition for handwritten characters of a language having character stroke order rules, the method comprising the computer implemented steps of:

storing a plurality of respective reference parameter sets in a reference character dictionary, wherein each of the plurality of respective reference parameter sets corresponds to a reference character stroke of a reference character, wherein each of the plurality of respective reference parameter sets has an associated reference sequence number;

receiving a stroke parameter set derived from user input of a handwritten stroke, wherein the handwritten stroke is one of a plurality of strokes required for writing a character;

identifying a stroke sequence number of the stroke parameter set; and

responsive to identifying the stroke sequence number, comparing the stroke parameter set with at least those of the plurality of respective reference parameter sets having their associated reference sequence number equal to the stroke sequence number, wherein the comparing excludes at least one of the plurality of respective reference parameter sets.

2. The method according to claim 1, wherein the step of storing includes:

maintaining each of the plurality of respective reference parameter sets in a plurality of respective fields of a table, wherein the stroke sequence number is derived from one of the plurality of respective fields.

3. The method according to claim 1, wherein the step of identifying includes:  
incrementing a counter value on receipt of the stroke parameter set, the counter value corresponding to the stroke sequence number.
4. The method according to claim 1, wherein the step of comparing further includes:  
excluding each of the plurality of respective reference parameter sets, wherein the associated reference sequence number for each of the plurality of respective reference parameter sets excluded is not equal to the stroke sequence number.
5. The method according to claim 1, further including:  
receiving an indication that a user has knowledge of the character stroke order rules.
6. The method according to claim 1, wherein the step of comparing further includes:  
comparing with the stroke parameter set at least one of the plurality of respective reference parameter sets, wherein the associated reference sequence number is within one increment of the stroke sequence number.
7. The method according to claim 1, wherein the step of storing includes:  
storing the respective reference parameter sets of a plurality of characters in the reference character dictionary.

8. The method according to claim 7, wherein each of the respective reference parameter sets of the plurality of characters is stored in one of a plurality of respective records of the reference character dictionary, and wherein each of the plurality of respective records includes a data element value equal to a number of constituent strokes of the reference character.

9. The method according to claim 8, further including:

excluding from the comparing step, at least one of the plurality of respective reference parameter sets of at least one of the plurality of respective records, wherein the data element value of the plurality of respective reference parameter sets excluded is less than the stroke sequence number.

10. A computer program product in a recordable-type medium for performing handwriting recognition of a language having character stroke order rules comprising:

a reference character dictionary including a first record defining a reference character, the first record including a plurality of reference parameter sets each of the plurality of reference parameter sets respectively defining stroke attributes of a stroke of the reference character, each of the plurality of reference parameter sets being associated with a reference sequence number;

first instructions for receiving a stroke parameter set derived from a first handwritten character stroke and for identifying a stroke sequence number in which the first handwritten character stroke was input by a user;

second instructions, responsive to identifying the stroke sequence number, for comparing the stroke parameter set with at least one of the plurality of reference parameter sets wherein the reference sequence number of the plurality of reference parameter sets compared is equal to the

stroke sequence number; and

third instructions for excluding at least one of the plurality of reference parameter sets from the comparing step wherein the reference sequence number of the plurality of reference parameter sets excluded is not equal to the stroke sequence number.

11. The computer program product according to claim 10, wherein each of the plurality of reference parameter sets is stored in one of a plurality of respective fields of the reference character dictionary, the reference sequence number determined by one of the plurality of respective fields.

12. The computer program product according to claim 10, wherein the first instruction identify at least one of the plurality of reference parameter sets, wherein the associated reference sequence number of the at least one reference parameter identified set has a value within one increment of the stroke sequence number, and wherein the second instructions compare the stroke parameter set with the at least one reference parameter set identified.

13. The computer program product according to claim 10, wherein the first record includes a data element value specifying a number of constituent strokes of the reference character.

14. The computer program product according to claim 10, wherein the reference character dictionary includes a second record having at least one second reference parameter set defining attributes of a second handwritten character stroke of a second reference character and a data element value specifying a number of constituent strokes of the second reference character,

wherein the third instructions, responsive to a determination that the number of constituent strokes of the second reference character is less than the stroke sequence number, exclude the second reference parameter set of the second record from the comparing step.

15. The computer program product according to claim 10, wherein the first instructions, responsive to receiving the stroke parameter set, increments a counter that identifies the stroke sequence number.

16. A data processing system comprising:

a reference character dictionary including a record having a plurality of reference parameter sets each defining reference attributes of a respective stroke of a reference character, each of the plurality of reference parameter sets having an associated reference sequence number;

a memory that contains a set of instructions; and

a processing unit, responsive to executing the set of instructions, for receiving a stroke parameter set describing handwritten attributes of a handwritten stroke and for determining a stroke sequence number in which the handwritten stroke was input, responsive to determining the stroke sequence number, comparing the stroke parameter set with at least one of the plurality of reference parameter sets wherein the associated reference sequence number of at least one of the plurality of reference parameter sets is equal to the stroke sequence number, the comparing step excluding at least one of the plurality of reference parameter sets wherein the associated reference sequence number is not equal to the stroke sequence number.

17. The data processing system of claim 16, wherein the plurality of reference parameter sets are maintained in fields of a table, the set of instructions determining the associated reference sequence number of at least one of the plurality of reference parameter sets by the fields of the table in which the plurality of reference parameter sets are maintained.

18. The data processing system according to claim 16, wherein the set of instructions are adapted to identify at least one of the plurality of reference parameter sets, wherein the reference sequence number of the at least one reference parameter set identified is within a predefined value of the stroke sequence number, and responsive to identifying at least one of the plurality of reference parameter sets, compare the stroke parameter set with the at least one of the plurality of reference parameter sets identified.

19. The data processing system of claim 16, wherein the reference character dictionary includes a second record having a data element value indicating a number of constituent strokes of a second reference character, the second record further having at least one second reference parameter set, the set of instructions, responsive to determining the data element value is less than the stroke sequence number, excluding the at least one second reference parameter set of the second record from the comparing step.

20. The data processing system according to claim 16, wherein the record includes a data element value indicating a number of constituent strokes of the reference character, the set of instructions, responsive to reading the data element value, determining at least one of the

plurality of reference parameter sets to exclude from the comparing step dependent on the data element value.



## **EVIDENCE APPENDIX**

There is no evidence to be presented.

**RELATED PROCEEDINGS APPENDIX**

There are no related proceedings.